

### Abstract

Packet processing circuitry comprises a processor and a look-up engine. The look-up engine transfers a first selector to a CAM and receives a corresponding first result from the CAM. The look-up engine generates a second selector based on the first result. The look-up engine transfers the second selector to the CAM and receives a corresponding second result from the CAM. The look-up engine retrieves a first context structure based on the second result. The look-up engine builds a summation block using the first context structure and transfers the summation block to the processor. The processor receives and processes the summation block to control handling of the communication packet.